

# Water Security in Refugee Host Communities: Syrian Refugees in Jordan

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## Primary Research Questions

How do local environmental conditions, such as water supply, increase or decrease the economic benefits experienced by a host community in the wake of a refugee crisis?

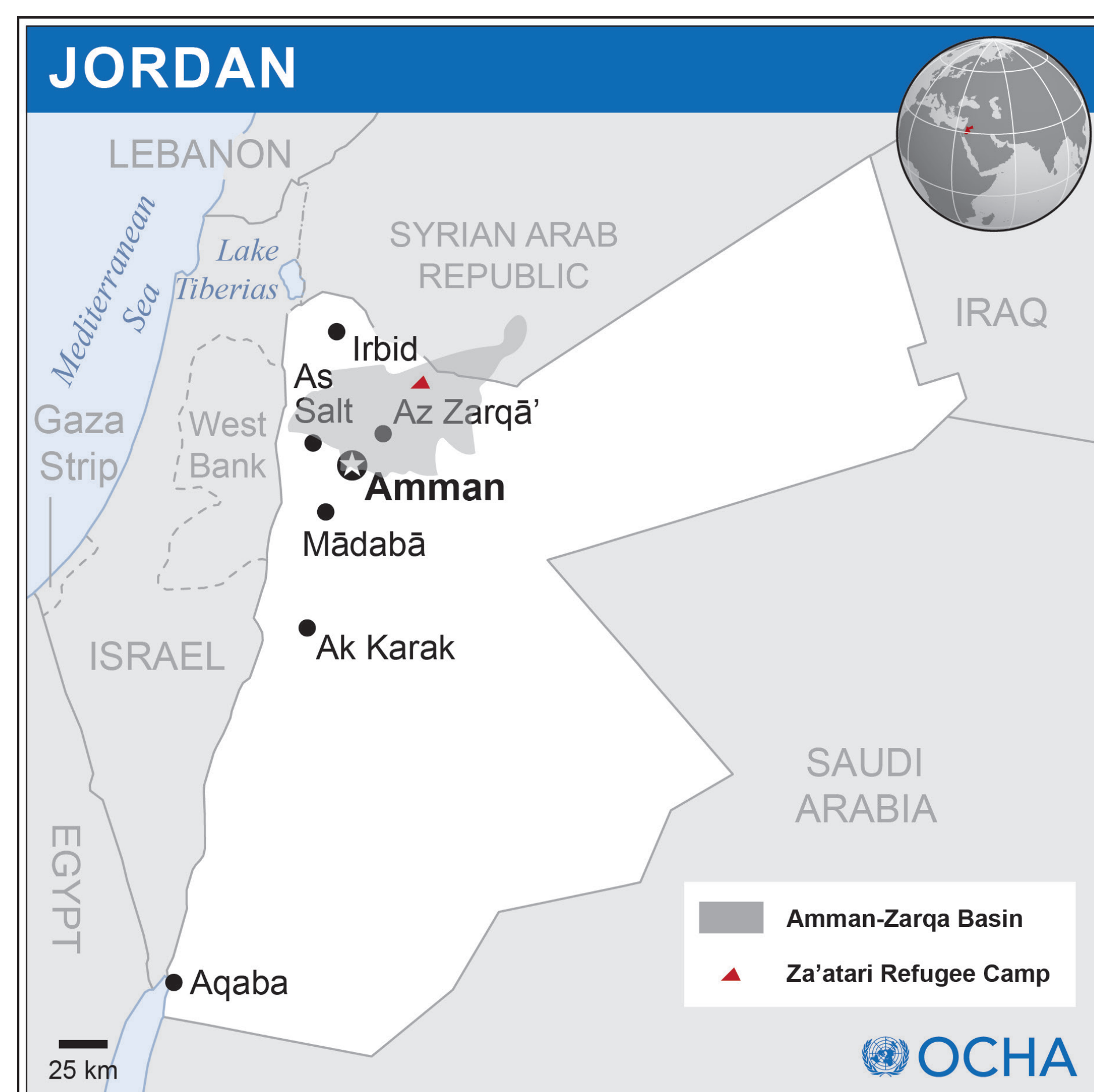
How are externalities on the host population spread across time?

## Local Context

Jordan, a country of only 6 million, is the 3rd most water-poor country in the world

1.4 to 1.8 million Syrian refugees have forcibly migrated to Jordan since 2012

“It is a crisis on top of crisis” -- A water official’s take on the situation during fieldwork conducted during May 2014



Za'atari Refugee Camp  
(peak population: 202,993)

## Amman-Zarqa Basin

Where Jordan’s water and refugee crisis meet  
(see map to left)

Before the refugee influx, the water table was dropping 1..08 meters/year and projected to be depleted by 2060

Agriculture consumes 66% of the basin’s groundwater supply, with annual production of nearly \$300 million

## Methods

A dynamic economic model of groundwater extraction is used to analyze how extraction and water table levels are likely to respond to a large refugee influx

Associated welfare measures representing net benefits from water can then be calculated to identify the potential externality in domestic vs. agricultural sectors

## Main Findings

Water must be allocated away from producing sectors to provide for refugees

This suggests that agricultural producers will be unable to respond to increased demand for their goods

Potential welfare reductions in ag sector:

- minimum: -27%
- maximum: -71%

The externality is likely to be long-lived:

- Groundwater could be depleted by 2040
- Agriculture is unsustainable in the long-run

## Policy Implications

Long-term capacity

- Rehabilitate infrastructure to reduce high leakage rates
- Expand wastewater reuse in ag sector
- Currently planned desalination projects could have limited impact

Local capacity

- Microloan financed rainwater catchment systems can provide half of a household’s annual water supply
- Such projects are teaching important water management skills to Jordanian and Syrian households
- Local empowerment leads to reduced tension between refugee and host communities

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